

Family Medicine Refresher Course

Diagnosis and Treatment of Insomnia

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Mark Eric Dyken, MD, FAHA, FAASM, FANA
Professor of Neurology
Director Sleep Disorders Center and Sleep Medicine/Clinical Neurophysiology
Fellowship Programs
Department of Neurology
UIHC

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☒ 1. I do not have any potential conflicts of interest to disclose, **OR**

2. I wish to disclose the following potential conflicts of interest:

Type of Potential Conflict	Details of Potential Conflict
Grant/Research Support	
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☒ 3. The material presented in this lecture has no relationship with any of these potential conflicts, **OR**

☐ 4. This talk presents material that is related to one or more of these potential conflicts, and the following objective references are provided as support for this lecture:

I. INSOMNIA

Insomnia

“Persistent difficulty with sleep initiation, duration, consolidation, or quality that occurs despite adequate opportunity and circumstances for sleep, and results in some form of daytime impairment.”

For adults; “difficulty initiating or maintaining sleep”.

American Academy of Sleep Medicine. International classification of sleep disorders, 3rd ed. Darien, IL: AASM, 2014.

INSOMNIA

- As such, 3 conditions are implied by insomnia:
 - 1. Adequate sleep opportunity
 - 2. Persistent sleep difficulty
 - 3. Daytime dysfunction

INSOMNIA

- Daytime symptoms may include:
 - Fatigue
 - Decreased mood or irritability
 - General malaise
 - Cognitive impairment

INSOMNIA

- Insomnia may:
 - Impair social/vocational functioning
 - Reduce quality of life

INSOMNIA

- Insomnia may lead to physical symptoms:
 - Muscle tension
 - Gastrointestinal upset
 - headache

INSOMNIA

- Insomnia may increase risk for:
 - Traffic and work-site accidents
 - Psychiatric disorders

INSOMNIA

- Secondary Insomnias;
 - Arise from a co-occurring primary or causative conditions, including medical illness, mental disorder and other sleep disorders.
- Primary insomnias;
 - cannot be attributed to another underlying primary sleep disorder
 - presumed to arise from various causes including both suspected intrinsic and extrinsic factors (often multifactorial).
 - American Academy of Sleep Medicine. International classification of sleep disorders, 2rd ed. Westchester, IL: AASM, 2005.

INSOMNIA

ICSD, 3rd Edition

- Chronic Insomnia Disorder
- Short-Term Insomnia Disorder
- Other Insomnia Disorder

- ISOLATED SYMPTOMS AND NORMAL VARIANTS
 - Excessive Time in Bed
 - Short Sleeper

Chronic Insomnia Disorder

General Criteria for Insomnia

- A. Complaint; difficulty initiating or maintaining sleep, or waking up too early, or sleep that is chronically nonrestorative or poor in quality.
- In children, the sleep difficulty is often reported by the caretaker and may consist of observed bedtime resistance or inability to sleep independently.
- B. The above sleep difficulty occurs despite adequate opportunity and circumstances for sleep.

General Criteria for Insomnia

- C. At least one daytime impairment is reported:
 - i. Fatigue or malaise
 - ii. Attention, concentration, or memory impairment
 - iii. Social or vocational dysfunction or poor school performance
 - iv. Mood disturbance/irritability
 - v. Daytime sleepiness
 - vi. Motivation, energy, or initiative reduction
 - vii. Errors/accidents; work or driving
 - viii. Tension, headaches, or gastrointestinal symptoms
 - ix. Concerns about sleep

INSOMNIAS (11 subsets)

- 1. Adjustment Insomnia (*Acute Insomnia*)
- 2. Psychophysiologic Insomnia
- 3. Paradoxical Insomnia
- 4. Idiopathic Insomnia
- 5. Insomnia Due to Mental Disorder
- 6. Inadequate Sleep Hygiene
- 7. Behavioral Insomnia of Childhood
- 8. Insomnia Due to Drug or Substance
- 9. Insomnia Due to Medical Condition
- 10. Insomnia Not Due to Substance or Known Physiological Condition, Unspecified (*Nonorganic Insomnia, NOS*)
- 11. Physiological (*Organic*) Insomnia, Unspecified

- Nonspecific:
 - Prolonged sleep latency
 - Prolonged REM latency
 - Reduced total percentage of stages 3 and 4 NREM and REM
 - Increased total percentage of stages 1 and 2 NREM
 - Reduced sleep efficiency

1. ADJUSTMENT INSOMNIA (Acute Insomnia)

- Identifiable stressor
- Short duration (days to weeks)
- Expected to resolve
 - When stressor resolves
 - Individual adapts
- Commonly with anxiety, worry, rumination, sadness, or depression related to specific stressor.

1. ADJUSTMENT INSOMNIA (Acute Insomnia)

- **Acute onset/identifiable stressor/short duration:**
Clearly defined onset, with identifiable event/stressor, lasting no more than 3-months.
- One-year prevalence in adults; 15%-20%.
- More common in women and older adults
- May be prone to maladaptive behaviors and more persistent forms of insomnia.

1. ADJUSTMENT INSOMNIA (Acute Insomnia)

- Diagnostic Criteria
 - A. General criteria for insomnia
 - B. Identifiable stressor
 - C. Expected to resolve with resolution of stress/adaptation
 - D. < 3-months duration
 - E. Not explained by other disorder/drug

2. PSYCHOPHYSIOLOGICAL INSOMNIA (conditioned insomnia)

- Learned sleep-preventing associations
 - Arousal associated with emotional reactions to internal cognitions or external stimuli
 - “racing mind”
 - Effortful preoccupation with sleep; the more you try to sleep, agitation increases, leads to inability to fall asleep
 - Despite frequent fatigue, no tendency to sleep in daytime.

2. PSYCHOPHYSIOLOGICAL INSOMNIA

- 1%-2% of general population, 12%-15% of sleep center patients
- May be a 2ndary diagnosis
- More frequent in women, rare children; more in adolescents, and all adults
- Possible congenital vulnerability for insomnia

2. PSYCHOPHYSIOLOGICAL INSOMNIA

- May result from Adjustment (acute) Insomnia that did not resolve.
- Higher risk for first or recurrent depression and excessive use of sleep aids.
- May lead to mood disturbance

2. PSYCHOPHYSIOLOGICAL INSOMNIA

- Reverse first-night effect in the sleep laboratory
 - Sleep better in the sleep laboratory than home.

2. PSYCHOPHYSIOLOGICAL INSOMNIA

- **Diagnostic Criteria**

- A. General criteria for insomnia
- B. Insomnia \geq 1-month
- C. Conditioned heightened arousal in bed, indicated by 1 or more:
 - i. Excess focus/anxiety with sleep
 - ii. Difficult falling asleep desired time, but not at other soporific times
 - iii. Sleep better away from home
 - iv. Mental arousal indicated by intrusive thoughts
 - v. Somatic tension in bed; inability to relax
- D. Not better explained by other disorder/drugs

3. PARADOXICAL INSOMNIA

- Sleep state misperception.
- Complaints of severe insomnia without support of objective sleep disturbance or daytime impairment
- No significant psychopathology/malingering.

3. PARADOXICAL INSOMNIA

- Overestimation of sleep latency, underestimate sleep time relative to objective sleep recordings
- Concerns about long-term effects of perceived deficits not always reduced when presented with objective findings.

3. PARADOXICAL INSOMNIA

- < 5% of insomniacs.
- More common in women, young and middle-aged adults.
- Depressive traits, neuroticism, excessive CNS activation, and excessive mentation immediately prior to sleep may be factors.

3. PARADOXICAL INSOMNIA

- Polysomnography:
 - Patient's estimates of sleep latency; 1.5 x documented.
 - Patient's estimated total sleep time \leq 50% documented.

3. PARADOXICAL INSOMNIA

- MSLT; normal or mild sleepiness.
- Power-density measures; may show greater high-frequency activity
 - Krystal et al. Non-REM sleep EEG frequency spectral correlates of sleep complaints in primary insomnia subtypes. *Sleep* 2002;25:630-640.
 - Salin-Pascual et al. Long-term study of the sleep of insomnia patients with sleep state misperception and other insomnia patients. *Am J Psychiatry* 1992;149:904-8.

4. IDIOPATHIC INSOMNIA

- Lifelong, insidious onset in infancy or childhood, without periods of remission.
- No precipitating factors.
- Psychological symptoms; minor

4. IDIOPATHIC INSOMNIA

- Limited evidence; association with ADHD/dyslexia.
- 0.7% of adolescents, 1.0% of adults
- < 10% of the sleep-clinic insomnia population

4. IDIOPATHIC INSOMNIA

- Polysomnography:
 - May show reduced body movements, despite severe sleep disturbance.

4. IDIOPATHIC INSOMNIA

- Early onset, stability, life-long course suggest a genetic/congenital aberration of the sleep/arousal systems in the brain which have not been identified to date.
 - Hauri et al. Childhood-onset insomnia. *Sleep* 1980;3:59-65.
 - Reynolds et al. Subtyping DSM-III-R primary insomnia: a literature review by the DSM IV work group on sleep disorders. *Am J Psychiatry* 1991;148:432-8.

5. INSOMNIA DUE TO MENTAL DISORDERS

- Insomnia is caused by an underlying mental disorder.
- However, the insomnia is severe enough that it constitutes a distinct complaint or focus of treatment.

5. INSOMNIA DUE TO MENTAL DISORDERS

- Frequent in mood disorder like major depression, dysthymic, bipolar, and cyclothymic disorders.
- Occurs in most anxiety disorders and various somatoform disorders.
- Addressed specifically in the ICSDs Appendix B.
 - American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 4th ed. Arlington: American Psychiatric Publishing Inc.; 1994.

5. INSOMNIA DUE TO MENTAL DISORDERS

- Appendix B: Other Psychiatric and Behavioral Disorders Frequently Encountered in the Differential Diagnosis of Sleep Disorders
 - 1. Mood Disorders
 - 2. Anxiety Disorders
 - 3. Somatoform Disorders
 - 4. Disorders Usually First Diagnosed in Infancy, Childhood or Adolescence
 - 5. Personality Disorders

5. INSOMNIA DUE TO MENTAL DISORDERS

- Polysomnography; especially in major depression:
 - Reduced REM latency
 - Increased REM density; especially the early REM periods.
 - These changes usually persist with treatment and may have preceded the initial episode of depression.

6. INADEQUATE SLEEP HYGIENE

- Daily living activities inconsistent with maintenance of good quality sleep and full daytime alertness.
- Due to sleep practices that are generally under individual's behavioral control. Nevertheless, many patients show little insight into the effect of these practices on their sleep.

6. INADEQUATE SLEEP HYGIENE

- Sleep practices under individual's behavioral control:
 - 1. Practices that increase arousal
 - Caffeine, nicotine, alcohol, stress, excessive physical activity before sleep.
 - 2. Practices inconsistent with principles of sleep organization
 - Too much time in bed, day-to-day variations in sleep-wake schedule, too many naps at variable times.

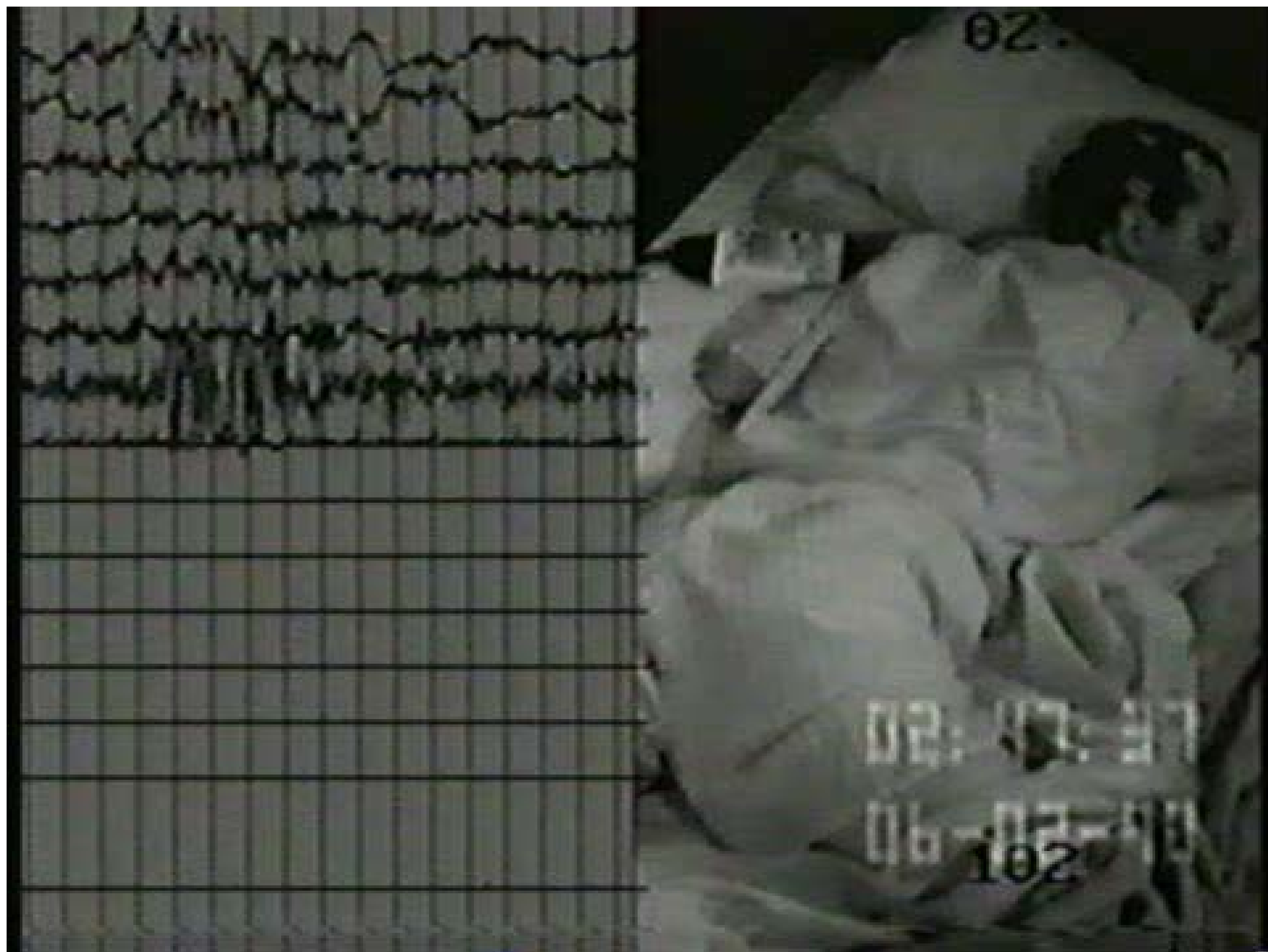
6. INADEQUATE SLEEP HYGIENE

- 1% to 2% of the population.
- 5% to 10% of those present to sleep-clinics with insomnia.
- As many forms of insomnia are associated with sleep disruptive practices, up to 30% of those who present to sleep-clinics with insomnia may have this as a primary or secondary diagnosis.
- As such, good sleep hygiene is frequently recommended as an adjunct in any treatment of chronic insomnia.

ICSD Diagnostic Criteria

Inadequate sleep hygiene practices are evident as indicated by the presence of at least one of the following:

- i. Improper sleep scheduling consisting of frequent daytime napping, selecting highly variable bedtimes or rising times, or spending excessive amounts of time in bed
- ii. Routine use of products containing alcohol, nicotine, or caffeine, especially in the period preceding bedtime
- iii. Engaging in mentally stimulating, physically activating, or emotionally upsetting activities too close to bedtime
- iv. Frequent use of the bed for activities other than sleep (e.g., television watching, reading, studying, snacking, thinking, planning)
- v. Failure to maintain a comfortable sleeping environment



7. BEHAVIORAL INSOMNIA OF CHILDHOOD

- Relate to identified behavioral etiology; inappropriate sleep associations or inadequate limit setting.

7. BEHAVIORAL INSOMNIA OF CHILDHOOD

- Sleep-onset Association Type:
 - Dependency on specific stimulation, object, or setting for initiating or returning to sleep. As sleep onset associations are so prevalent in young children, this is a disorder only if highly problematic.
- Limit-setting Type:
 - Bedtime stalling or refusal. Often seen in older children who are no longer confined to a crib. Often the caregiver is the origin of this problem.
- Can lead to marital disputes and family conflicts.

7. BEHAVIORAL INSOMNIA OF CHILDHOOD

- 10% to 30% of children.
- Possibly slightly increased in boys.
- As children may not sleep through the night until 3-6 months of age, 6 months is a reasonable age to first consider a diagnosis.

8. **INSOMNIA DUE TO DRUG OR SUBSTANCE**

- Suppression or disruption of sleep caused by consumption of a prescribed medication, recreational drug, caffeine, alcohol, or food item or by exposure to an environmental toxin. Insomnia may occur during use, exposure, or upon discontinuation of the substance.

8. INSOMNIA DUE TO DRUG OR SUBSTANCE

- 0.2% of the general population.
- 3.5% of those who present to a sleep-clinic.

8. INSOMNIA DUE TO DRUG OR SUBSTANCE

- Polysomnography varies with substance:
 - Acute alcohol withdrawal, possible REM rebound.
 - Chronic alcohol withdrawal; light/fragmented sleep may persist for years.
 - Schweitzer P. Drugs that disturb sleep and wakefulness. In: Kryger MH, Roth T, Dement WC, eds. Principles and Practice of Sleep Medicine, 3rd ed. Philadelphia: WB Saunders; 2000:1176-96.

9. INSOMNIA DUE TO MEDICAL CONDITION

- Insomnia due to a coexisting medical condition or physiologic factor.
- This diagnosis should only be given when the insomnia causes marked distress or warrants separate clinical attention.

9. INSOMNIA DUE TO MEDICAL CONDITION

- Often disorders that cause pain (comfort necessary for normal sleep):
 - DJD, COPD/Asthma, Pregnancy, and a variety of neurologic disorders are a few.

9. INSOMNIA DUE TO MEDICAL CONDITION

- 0.5% of the general population.
- 4% of the clinical population.

9. INSOMNIA DUE TO MEDICAL CONDITION

- Polysomnography occasionally specific:
 - Cerebral degenerative disorders; poorly formed or absent sleep spindles.
 - Fibromyalgia; alpha intrusions into slow-wave sleep.

9. INSOMNIA DUE TO MEDICAL CONDITION

- Nonspecific treatment of sleep problem can be dangerous (example: benzodiazepines for sleep-related respiratory disorder).
- Moldofsky H. Sleep influences on regional and diffuse pain syndromes associated with osteoarthritis. Semin Arthritis Rheum 1989;18(Suppl2):18-21.

**10. INSOMNIA NOT DUE TO SUBSTANCE OR KNOWN
PHYSIOLOGIC CONDITION, UNSPECIFIED (NONORGANIC
INSOMNIA, NOS)**

- Insomnia not classified elsewhere, but suspected to be related to underlying mental disorder, psychological factors, or sleep-disruptive practices.

11. PHYSIOLOGIC (ORGANIC) INSOMNIA, **UNSPECIFIED**

- Not classified elsewhere, but suspected underlying medical disorder, physiologic state, or substance use or exposure.